



The Air Force Research Laboratory (AFRL) Space Vehicles Directorate

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Space Vehicles Directorate

Air Force Research Laboratory

FACT SHEET

When it comes to space vehicle technology, the AFRL Space Vehicles Directorate has five primary, very specific responsibilities mandated by the Air Force. Each of the various 40 programs underway within the AFRL Space Vehicles Directorate relates in some way to the following five “thrusters,” as they are called:

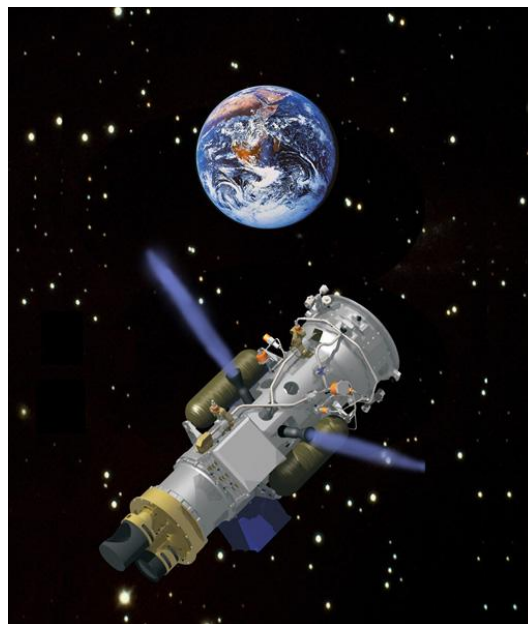
Space-Based Surveillance: Ideal surveillance technology in space, such as radar, infrared sensors, hyperspectral imaging, optics, etc., means knowing what is going on around the globe every minute-in real time-instantaneously. If this technology were fully operational today, no enemy would ever again be able to make a move without us knowing it at the very moment the first move is made. Command, control, communications, navigation and weather forecasting are involved in this thrust.

Space Capability Protection: The AFRL Space Vehicles Directorate works to understand the environment between the earth and the sun, and the effects on spacecraft, what we call the “battle space environment.” Developing technology that protects the “high ground” assets, such as radiation hardening and autonomous repair using “smart” systems, are prominent activities in this thrust. In other words, what can we do here at AFRL Space Vehicles Directorate to insure that a U.S. spacecraft remains in orbit as long as possible and still function adequately to complete its mission, whether in the face of natural or manmade threats? Micro satellites, structural controls, autonomous systems, multi-functional structures, etc. are all part of this thrust. The AFRL Space Vehicles Directorate has programs in all of these disciplines.

Counterspace: This enterprise requires AFRL Space Vehicles Directorate to develop and deploy the technology to deter and defend against hostile acts directed at U.S. space assets. How can we keep our enemies from using their space assets against ours?

Space Access/Mobility: The key to Air Force dominance of space is increased mobility once in space, and at lower costs, and lower costs of access to space, i.e., launch technology and payload packaging. This is where lighter payloads and cheaper launch vehicles come into play, as well as on-orbit transfer, maneuvering, and servicing or repair capabilities. Simply, now can we get into space, and once there, move around at will?

Demonstrations: How do we know if AFRL Space Vehicles Directorate technologies actually work? By conducting experiments and demonstrating new technologies, we actually put our technologies in space, or in the near-space environment. Micro Satellites are the emphasis today.



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